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Him-Dak: Contextualizing the Diabetes Experience of American Indians

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Him-Dak:
Contextualizing the Diabetes Experience of American Indians

by

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in partial fulfillment of the requirements for the degree of

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“Medicine is a social science, and politics is nothing more than medicine on a large scale.”

- **Rudolf Virchow** in

Die Medizinische Reform (Medical Reform)

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Thanks to *Josie* for unfolding the story of her community with a few words.

Introduction

Josie met me under the Feast House while I was jotting some field notes on the day's activities and observations. We were exchanging casual stories and jokes, and she asked me for the reason why I was on the reservation. As I shared with her the basic intent and structure of my research proposal with her community, she shared,

*"People come around here all the time. You know, people who don't live here. People who want to study us. We're used to seeing this. But things really haven't changed after all those people coming in and asking questions, taking blood... after all those times. I got this diabetes thing eventually. I mean, I was sorta expecting it. We hear about it all the time. All my family has it. And now I live with it. This is **Him-Dak** for me, for us."*

Her words left me unable to respond. And in my silence, she continued to share her feelings and experiences unprompted until her ride came by to take her to the dialysis clinic for her regular treatment. We parted ways with smiles on our faces. I stayed at the Feast House and continued to think through her statement, "This is **Him-Dak** for me, for us" meaning "This is **my/ our way of life** for me, for us." I continued to think through this statement in the hotel room, back in the dormitory on campus, everywhere all the time. This investigative query and paper ultimately resulted from *Josie's* words.

Although most research projects related to type II diabetes focus on diet, physical activity, and genetics, I contend that these issues obscure the socioeconomic issues fundamental to the etiology of diabetes. When the physical manifestations of diabetes – high blood sugar, depression, blurry vision – are torn from their social contexts, the patients are stripped of the social and moral meanings their bodies are trying to communicate. In this paper, the political economy of diabetes will be explored through the social-economic history of the Pima Indians of the Ak-Chin Indian Community to show how type II diabetes relates to macro-level politics and economics as they affect and shape the mediating micro-level experiences of the individual.

Through contextualization of the diabetes experience, I will outline a history of traumatic losses and shrinking culture from the exploitive imperialistic endeavors of colonization that have made this particular population group susceptible to diabetes. The themes of loss in terms of natural resources, autonomy, and identity/culture are common in most American Indian histories as well as other colonized indigenous populations all around the world.

The diabetes epidemic

In 2002, 27.8% of American Indians in the southeastern United States had been told by a doctor or other health professional that they had diabetes mellitus (Center for Disease Control and Prevention, 2005a) while 7% of the total adult population in the United States had been told the same (Center for Disease Control and Prevention 2005b). On average, American Indians and Alaskan Natives are 2.3 times more likely to have diabetes as non-Hispanic Anglos of similar age (Center for Disease Control and Prevention 2005a). Although these statistics are alarmingly high for American Indians as a whole, more than half of the Pima Indian adults of Arizona over the age of 35 have been diagnosed with Type II diabetes (Knowler, Pettit, Bennett, and Williams 1983:107).

Because of the disproportional incidence and prevalence rates of diabetes of the Pima Indian community, this population group is more known for their diabetes than for their history or culture and has been the focus of countless research and intervention studies. Despite this concentrated effort, data from research conducted by the National Institutes of Health since 1965 reveal that the incidence of Pima diabetes to have increased for three successive decades in both men and women (Narayan 1997:173). Diabetes is also a pertinent issue for national and international investigations with escalating rates of incidence and prevalence around the world.

Recently compiled data show that approximately 150 million people have diabetes mellitus worldwide, and that this number may well double by the year 2025 (World Health Organization 2002).

There are three primary forms of diabetes mellitus, but the most frequent form of diabetes being detected in indigenous populations around the world is type II. Morbidity and mortality rates associated with both type I and type II diabetes manifest as secondary illnesses and complications including: (1) cataracts, glaucoma, and the diabetic retinopathy leading to impaired vision and blindness; (2) diabetic neuropathy, which leads to end-stage renal disease; (3) increased frequency of cardiovascular associated diseases including coronary artery disease, stroke, hypertension, and lower limb vascular disease that may result in gangrene and lower limb amputation; (4) increased susceptibility to infection; (5) increased rates of periodontal disease; (6) increased rates of perinatal mortality and congenital abnormalities; and (7) neuropathy (Joe and Young 1994:3). Because of these secondary complications, diabetes is a costly disease not only in terms of medical costs but also in terms of human cost. Morbidity rates are particularly high for American Indians. Among the Pima Indians, type II diabetes is a leading cause of extremity amputation and acquired renal disease, is associated with an increased risk for ischemic heart disease and infections, contributes to higher risk for depression, which is made worse by alcoholism (Narayan 1997:178; Harris 1998:s20). Diabetes-related conditions account for 19.5% of all age-adjusted Pima deaths, four times that of Anglos and two times that of blacks in the United States (Newman, DeStefano, Valway, German, and Muneta 1993:298).

Biomedicine

Like most health disparities patterns, diabetes is not strictly a bio-medical problem and has economic, social, cultural, and political dimensions. However, genetics, nutrition, obesity, and physical activity are the default explanations for the diabetes epidemic in lieu of more psychosocial and economic factors.

All medical systems, including biomedicine, are cultural systems rooted in particular social traditions and socially constructed world views. Biomedicine is one among numerous alternative professional ethnomedicines. All medicines share a basic epistemological quality: they are versions of reality, stocks of knowledge and modes of comprehension and action in reference to, but ontological distinct form, reality (Gaines and Hahn 1985:6). Biomedicine sees social factors as clues to the “real” biological/pathogenic causes of disease. However, this approach focuses on the proximate causes of disease and illness but ignores the ultimate.

Disease is more than just the straightforward outcome of an infectious agent or pathophysiological disturbance. Instead, a variety of problems – including malnutrition, economic insecurity, occupational risks, bad housing, and lack of political power – create an underlying predisposition to disease and death (Waitzkin 1981:98). Under a biomedical investigation, a sick individual is regarded as a set of physical symptoms, rather than as a person who belongs to a social class in a particular society. This process turns our attention away from the political roots of disease, and conceals these roots by providing us with an alternative explanation. By and large, this explanation implies that people are responsible for their own health leading to a blame-the-victim mentality (de Beer 1986:70). In essence, you are responsible for your health, and when you get sick, you have not acted in a responsible fashion.

The role of stress in diabetes

According to biomedical principles, type II diabetes is characterized by insulin resistance due to a post receptor defect in cells inhibiting the insulin-cell receptor interaction that facilitates cellular uptake of glucose. However, there is a neurophysiological link between stress and glucose intolerance that has been consistently overlooked. The systematic exposure to trauma, stressors and other kinds of nervous stimuli can produce diabetes (Poss 2000; Rock 2003). For example, Jo Scheder's analysis of the social issues fundamental to the etiology of the disease has demonstrated the relationship between stressful events and life change, social inequality and psychological stress inherent in a migrant life-style, and physiological responses culminating in hyperglycemia (1988; Morsy 1990:38). This occurs through corticosterone and adrenaline which metabolizes fat, carbohydrates, and proteins and also stimulates the sympathetic nervous system to increase the production of glucose in the liver and release it into the organism. The implications of this oversight in psychosocial and economic factors are that the contexts that engender heightened blood sugars are left undisturbed while drug therapies bring blood glucose levels down (Ferriera 1996). Therefore, there is a great need to devote the same attention to the broad contexts of human environments and experiences as to micro-level analyses of human behavior and its biological correlates in fully investigating the diabetes epidemic of the Pima Indians.

The Pima Indians of the Ak-Chin Indian Community

The Pima Indians of Southern Arizona have lived near the Phoenix area for at least 500 years and may be descendents of the ancient Hohokam who occupied southern and central Arizona for about 1100 years between about AD 400 and AD 1500 (Smith-Morris 2001:13).

The Ak-Chin Indian Community was created in May of 1912 by the Executive Order of President Taft who initially signed for a 47,600 acre reservation. However, the following year he rescinded that order and reduced the Community to its current size of just under 22,000 acres (Inter Tribal Council of Arizona, Inc. 2003) (Figure 1) (Figure 2). Ak-Chin is an O'odham word that means, "a place where the water loses itself in the sand or ground."



FIG 1. A) Borders of Ak-Chin Indian Community in Arizona. Star indicates location of Ak-Chin Diabetes Prevention Program and Ak-Chin Health Clinic.



FIG 2 Main residential area of Ak-Chin Indian Community in Arizona with borders. A) Harrah's Ak-Chin Casino. B) Dialysis center. C) Ak-Chin Him-Dak Eco-Museum. D) Urban center of the city of Maricopa.

The Ak-Chin Indian Community is a federally recognized tribe with an annual budget of more than a million dollars and with approximately 700 members of Tohono O'odham and Pima peoples. The median age of the community population is just under 23 years, and the major employers are Ak-Chin Farms, Vekol Commissary, AKCO lumber and supply, Walker Farm Fresh Meats, Ak-Chin tribal government, and Harrah's Casino (U.S. Census Bureau 2000; Inter Tribal Council of Arizona, Inc. 2003). Reservation land is primarily used for agriculture, and these 15,000 acres of farm land primarily produce barley, potatoes, alfalfa, cotton, pecans, corn, and milo (Ak-Chin Farm Board 2004:8). The tribal economy is supported by one casino, Harrah's Ak-Chin Casino (Figure 3).

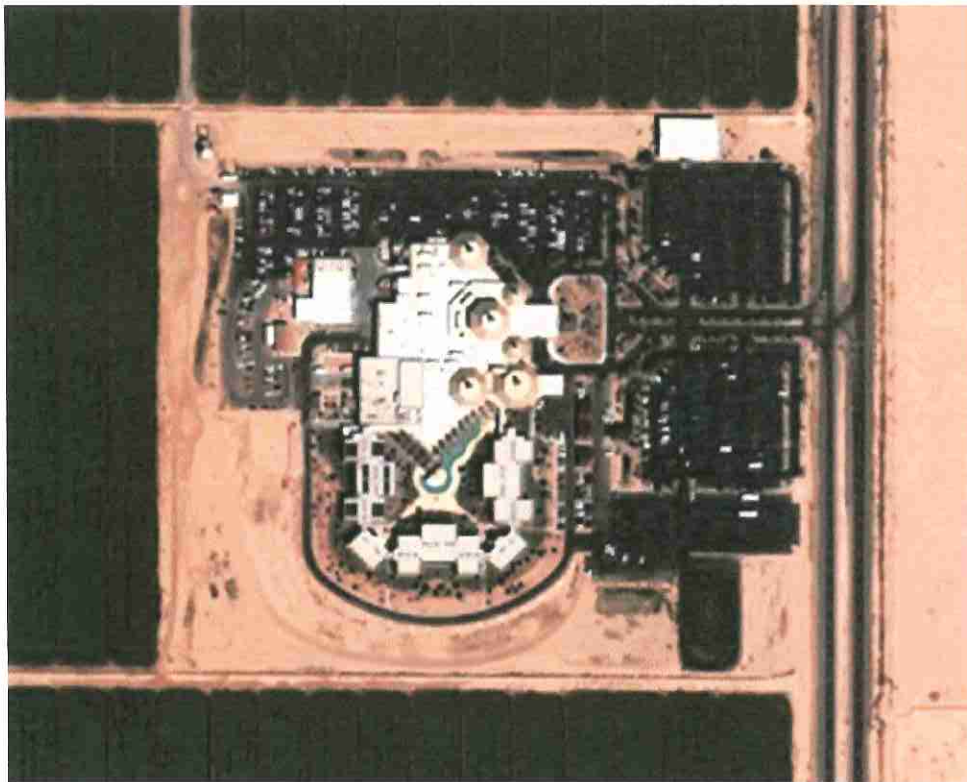


FIG 3. Harrah's Ak-Chin Casino in the heart of the reservation.

The community is governed by an elected five person community tribal council. A small health clinic is located on the reservation that meets the general needs of the community but requires a car to get there since it is about a three to five mile distance from the residential cluster (Figure 4). This clinic is funded by the Gila River Health Care Corporation. The Ak-Chin Diabetes Prevention Program is located right next to this clinic and offers services for community outreach, preschool activities, worksite fairs, and individual education and counseling (Figure 4). This clinic is funded by the Department of Health and Human services through the Special Diabetes Program for Indians Grant. A dialysis center is located at the edge of a cluster of residential homes on the reservation and is privately run and operated (Figure 5). The nearest hospital serving emergency biomedical needs is the Hu Hu Kam Memorial Hospital

which is about an hour's drive away driving at the speed limit of the roads. Another hospital is the Phoenix Indian Center which is about a drive for an hour and a half.



FIG 4. A) Tribal council. B) Ak-Chin Diabetes Prevention Program clinic. C) Ak-Chin health clinic.




FIG 5. A) Dialysis center at edge of residential area of reservation.

A small commissary, Vekol's, serves some of the material needs for the community like sparse groceries, few school supplies, and minimal hardware supplies (Figure 6). The commissary also boasts a kitchen that serves hot food and a gas station. For larger needs, members of the Ak-Chin community can take a five minute drive into the rapidly growing city of Maricopa just outside the borders of the reservation to the grocery store which was established two years ago. Prior to the establishment of the grocery store, individuals and families traveled nearly an hour to purchase affordable produce and other necessary materials.

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FIG 6. Advertisement for commissary products and services on reservation. Appears in all issues of the *Ak-Chin O'dham Runner*, the local newspaper distributed to all households on the reservation.

There are about 750 residents that live in the Ak-Chin Indian Community. Of these 750 residents, 700 are enrolled Tribal members, and of these 700 Tribal members, about 500 actually live on the reservation composing about 250 households. Of these 500 members, 205 have been diagnosed with type II diabetes – nearly half the community's population. The breakdown of prevalence shows that type II diabetes affects adults over the age of 30 years the most (Figure 7). Of these diagnosed diabetics, nearly 40% experience serious morbidity associated with type II diabetes i.e. end stage renal disease, limb amputation, dialysis/kidney transplantation.

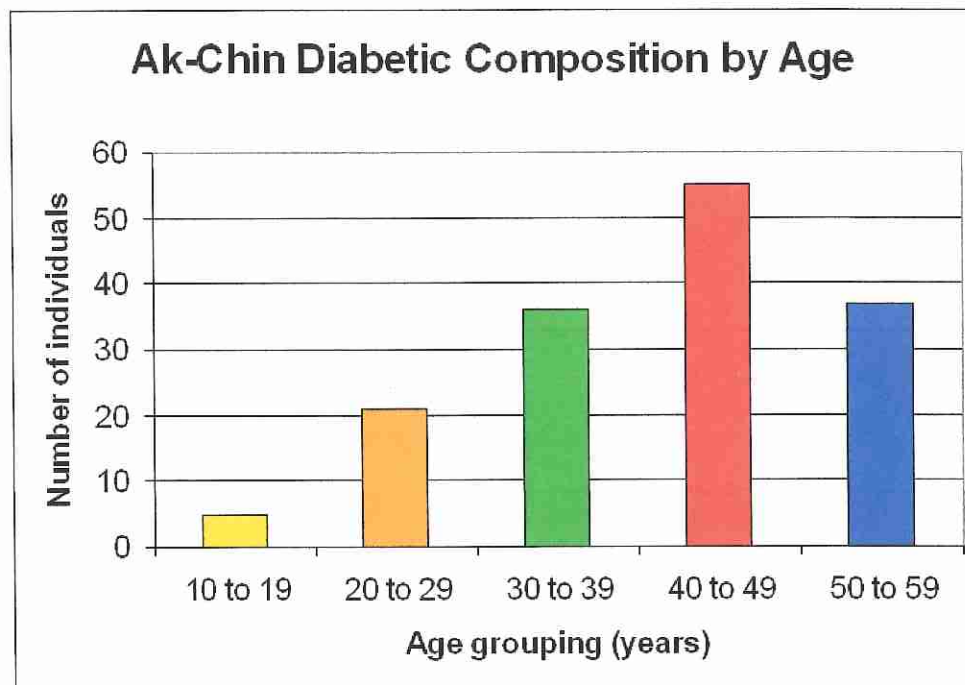


FIG 7. Data taken from Ak-Chin Diabetes Program monthly newsletter (January 2004).

History: Loss of natural resources

The loss of natural resources is a common theme among the histories of American Indian populations, and Carolyn Smith-Morris in her dissertation has outlined the experiences of the Pima Indians of the Gila River Reservation (2001:13-32), which are similar to the experiences of the Pima Indians of the Ak-Chin Indian Community. As populations in the West grew during the 18th century and access to water became increasingly contested, water became a commodity in the desert especially for farmers in the Southwest like the Pima Indians. The Pimas maintained their agricultural fields and irrigation canals based on knowledge from a long history of excellent agricultural subsistence. However, increasing Anglo immigration to the Southwest through much of the 19th century placed pressure on American Indians for space and resources. The Indian Removal Act of 1830 threw open the door for imperialist expansion south and west

across what would become U.S. territory. When the Pimas had “secured land” through reservation policy near the end of the 19th century, almost all of the Pima farms had dried up due to loss of water to upstream Anglos who violated prior appropriation rights to river water flow. The San Carlos Irrigation Project of 1924 aimed to alleviate these drought conditions, but once construction had completed in the mid-1930s, water allocation proved to be unequal and left the Pimas on a partial water supply.

In addition to the lack of water, Indian small-scale farms were increasingly unable to cope or compete with the growing technologization of farming around the Phoenix area through the first quarter of the 20th century. Small family plots were not well-organized or economically capable of harvesting enough to subsist upon, and the Pima farmers sold or leased to Anglo farmers. Because of Anglo encroachment into tribal territories and on tribal access to water, the Pima could no longer support themselves through farming alone. This need for a larger, more productive, and more lucrative farming lead to the transition into wage labor, income from leased lands, and dependency on federal aid money.

History: Loss of autonomy

Tribal nations have continually been recognized as parties incapable of dealing with the United States yet they remained separate if wholly unequal sovereigns outside the pale of the American Constitution. The overall treatment of American Indian sovereignty and autonomy of the United States has gone through a period of seven distinct stages (Canby 1988, Smith-Morris 2001). From 1790 to 1834, several Trade and Intercourse Acts separated Indians from non-Indians and placed all interactions between these two under federal control. During the Removal Period from 1820 to 1850, tribes were forced to relocate to West of the Mississippi, and

legislature at that time framed tribes to be “domestic dependent nations” with the U.S. federal government acting like a guardian. During the Reservation Period from 1850 to 1887, Indians were forced into reservation land to create not only physical distance between Indians and non-Indians but to also “civilize” them through the work of missionaries, supervision of an Indian agent, and boarding schools. Also, the General Allotment Act of 1887 negated Indian rights to possess and occupy their lands, destroyed tribal traditions and influence, and dismantled most tribal governments by imposing concepts of property ownership and legal title and promoting different patterns of land use and personal occupation ushering in an era of poverty that has been and continues to be difficult to overcome.

There was a shift in policy attitude after the Meriam Report in 1928. During the Indian Reorganization period from 1934 to 1952, the Secretary of the Interior authorized land and water rights to set up reservations and permitted tribes to once again organize constitutions and bylaws. From 1953 to 1967, Congress retreated to a policy of termination, canceling the status of many Indians as wards of the U.S. However, from 1967 onwards to the present day, the federal government has been pushing for self-determination of American Indians. The Self-Determination Act of 1974 was the first time that tribes were given money to build self-governance, administration, and development capacities and were allowed to succeed and fail on their own merit. Since then, tribes have rejected grant-like support from the federal government in favor for contract-based support. PL9-638, commonly called 638 compacts, have been passed to take programs and funds away from the Bureau of Indian Affairs to the tribes while maintaining U.S. legal and moral support for these services.

History: Loss of identity

During the Reservation period from 1850 to 1887, a variety of procedures were implemented to “kill the Indian but save the man.” The missionary movement sought to civilize and Christianize the “savage Indian” through assimilation either in time or in the after-life, which destroyed the Indian way of life and permitted the expansion of the Anglo population (McFenzie 1914). Boarding schools have represented the ultimate legacies in loss of culture and identity. Off-reservation boarding schools were established to permit the education of Indian children away from tribal environments to further the civilizing mission of reservation because the government had decided that it would be more effective to “civilize” children who would then affect their parents and elders and also future generations (Garrett and Pichette 2000).

“It is a great mistake to think that the Indian is born an inevitable savage. He is born a blank, like the rest of us. Left in the surrounds of savagery, he grows to possess a savage language, superstition, and life. We, left in the surroundings of civilization, grow to possess a civilized language, life, and purpose. Transfer the infant white to savage surroundings, he will grow to possess a savage language superstition, and habit. Transfer a savage born infant to the surroundings of civilization, and he will grow to possess a civilized language and habit... The end to be gained is the complete civilization of the Indian...the sooner all tribal relations are broken up, the sooner the Indian loses all his Indian ways, even his language, the better it will be.” (Pratt 1987).

Before 1928, boarding schools removed Indian children from family influence, eliminated Native languages in favor of English, outlawed traditional religion and customary practices, instilled Christian religion, and indoctrinated children to Anglo values in a culture of

strict military discipline. However, things changed slightly when the results of a Senate investigation of the government's dealings with the American Indians were published in the Meriam Report of 1928. In this report, boarding schools were found to be deficient in education, living conditions, health care, teacher and matron qualifications, and curriculum. After 1928, boarding schools were primarily used for vocational training and instilling self-sufficiency and productivity to the Indian worker.

Historical Critique

Poverty, inequality, and exploitation have shaped the material conditions, experiences, and perceptions of conditions for individuals and groups at the local level (Leatherman 2005:54). The historical analysis of Pima Indian history have shown that the political economy of agricultural development and nutrition were conducive to the maintenance of many basic causes of malnutrition and disease as land rights shifted through agrarian reform and penetration of capitalist relations into the rural economy (Leatherman 2005:56). A strategy of agricultural development based on large-scale farming lead to a majority of farmers being driven off their own land; monopolistic control of the land, essential for the burgeoning agribusiness, caused formerly independent farmers to lose control over crop acreage and food production (Taussig 1978). Furthermore, consequent rise in markets and commodization of goods and labor drew rural producers into a cash economy and significantly altered local social and economic differentiation and capabilities of dealing with health and production problems when they arose (Leatherman 2005:57). This changing relations of production altered people's perceptions of their own vulnerability as well as their ability to operate within conditions of economic marginality. The loss of agro-pastoral livelihood has signified a loss of social and cultural

identity and represents another set of meanings and implications of vulnerability in addition to the vulnerability from the forceful loss of culture and identity. These vulnerabilities also made the Pima Indians more dependent on the paternalistic federal government for essential supplies and needs to survive the daily life.

Narratives: Methodology

“The body is molded by a great many distinct regimes; it is broken down by the rhythms of work, rest and holidays; it is poisoned by food or values through eating habits or moral laws; it constructs resistances. The body manifests the stigmata of past experience and also gives rise to desires, failing, and errors. These elements may join in a body where they achieve a sudden expression, but as often, their encounter is an engagement in which they efface each other, where the body becomes the pretext of their insurmountable conflict. The body is the inscribed surface of events (traced by language and dissolved by ideas), and a volume in perpetual disintegration” (Foucault 1993:148).

In sum, the body does not completely escape the influence of history. Although the relationship of domination and loss has indeed marked its power and engraved memories on suffering bodies, individuals have always reinterpreted the world according to its ever-changing conditions of existence, just as knowledges produced by other societies are always subject to transformation and revolutions (Ferriera 1994: 74). The body is not a passive and objectified biological artifact devoid of intentionality or intersubjectivity; rather it is dynamic, innovative, expressive, and unrestrained, and the body and bodily experiences cannot be separated from their cultural meanings (Taylor 2006: 5).

Because of logistical reasons, I was unable to interview the Pima Indians of the Ak-Chin Indian Community directly to investigate their personal experiences and thoughts on diabetes. Instead, seven visiting and full-time American Indian undergraduates at the University of Pennsylvania were asked to participate in a study examining their thoughts on diabetes. They were also asked if they could identify one family member or friend that would be willing to speak with me on their thoughts on diabetes. A total of fourteen tape-recorded interviews were conducted with American Indians from New Mexico, Arizona, and Alaska. There were seven males and seven females. Also, seven participants were 20-25 years old, and the other seven participants ranged from 45-65 years of age. Interviews were in a semi-structured format to take into account different discussions based on what the participants wanted to talk about. Interview questions addressed American Indian health knowledge, personal understanding of diabetes, and health-seeking behaviors. Interviews began with general questions about health and illness, signs and symptoms of illness, experiences with illness and healing, and personal definitions and opinions about various health topics. The second major area of questions introduced the topic of diabetes to the participant. Participants were asked to elaborate on their knowledge and understanding of diabetes disease etiology, diagnosis, co-morbid conditions, prevention, education, social meaning, and treatment options. Interview generally ran from a half hour to one hour in duration at a quiet location on the University of Pennsylvania campus by the choice of the participant. Participants that currently were in New Mexico, Arizona, and Alaska at the time of interview were interviewed over the phone. Interviews were then transcribed and coded for common thematic elements across all interviews. Direct quotes will not be used in the following section of the paper due to a request by one of the participants.

Through the narratives of the American Indian participants from New Mexico, Arizona, and Alaska, I will construct an explanatory model that reflects the knowledge, attitudes, and beliefs about diabetes that is applicable not only to Indian Communities of the represented participants but also to the Pima Indians of the Ak-Chin Indian Community and the general Indian Community of the United States.

Consensus on sugar

Generally, there was a basic understanding of the pathophysiology of diabetes. Most participants articulated a relationship between insulin and sugar in the body and knew that insulin production had decreased in diabetes. All study participants believed that diet regulation was very important in the treatment of type II diabetes. The participants who were in their 20s gave more in-depth biochemical responses than the older participants who often phrased the relationship as something to do with sugar being bad for the body and insulin is not taking it away. The younger participants often learned these concepts at school, diabetes prevention fairs at the community center, and media messages.

Consensus on genetics

When asked, "What do you think is the cause of diabetes?" all the study participants gave an answer that touched upon the thrifty gene hypothesis. Because diabetes mellitus was uncommon among the Pima Indians until the second half of the 20th century, several theories on the etiology of diabetes in American Indians have been debated (Pratley 1998:177). The observation that diabetes in the Pima Indians is strongly familial favors a genetic basis for the disease (Knowler, Pettit, Bennett, & Williams, 1983: 110). A frequently cited genetic basis for

type II diabetes in Pima Indians is the “thrifty gene” that predisposes them to diabetes as their lifestyle changes. This thrifty gene hypothesis, presented in 1962 by geneticist J. V. Neel, proposes a “thrifty” genotype suited to the feast and famine conditions of early hunter-gatherer existence, either through a quick insulin trigger, a fewer receptor cells for glucose, or enhanced fat metabolism. In a time of varying food supply, this would have been advantageous in that excess glucose would be stored as fat when food was plentiful and that fat would be used as energy when food was scarce. Because this enhances survival and reproduction, the individual with the “thrifty gene” has a better chance of surviving and reproducing. However, it remains unclear in what ways the thrifty hypothesis applies to American Indians. The “New World Syndrome” is posed as another explanation for type II diabetes insofar as it is one of a number associated with the staggering changes in diet, culture, and health of American Indians upon European settlement of North America (Jackson 1994:383). Collectively these findings suggest that type II diabetes has a substantial genetic basis in Pima Indians.

Theories and paradigms on the emergence and maintenance of health and disease patterns like the thrifty gene hypothesis affect individuals and shape individuals’ self-knowledge. The Pima Indians are arguably the most studied population group in diabetes for the past 50 years. This perpetuates discrimination and negative attitudes towards what it means to be a Pima Indian. David Kozak (1997) had conducted ethnographic interview with Pimas on the topic of diabetes and has suggested the concept of surrender to describe the Pima approach to its prevention and treatment. In this context, surrender is an emotion whereby individuals and a segment of a community feel unable to control what they perceive as an inevitable fact of life that lies outside of their direct influence. This is not to say that these people have given up on life in a fatalistic sense, nor is it simply learned helplessness. Rather, emotionally, they have

created a hypothetical life history of themselves where they expect to be sickened by, and to die from, diabetes because the weight of day-to-day experiences throughout their lifetime reveals this to be an appropriate and accurate assessment. *Josie's* statement of expecting diabetes with her experiences with her family and with researchers reflects this sense of surrender.

There are several problems that exist with the hypothesis of a genetic basis for type II diabetes in light of the complexity of diabetes etiology. For the thrifty genotype hypothesis, there is little evidence that early hunter-gatherers experienced the periodic starvation that would favor an insulin resistant gene. For the New World Syndrome argument, the rapid increases in the prevalence of diabetes during this century and the clear indications that changes in lifestyle contributed to this phenomenon seem incongruent with a clear genetic basis for type II diabetes in the Pima Indians (Wilson, Graham, Booth, and Gohdes, 1994:497). There are numerous other obstacles in identifying genes causing type II diabetes in the Pima Indians including an unclear inheritance pattern, the effect of multiple genes, and strong environmental effects (Wilson, Graham, Booth, and Gohdes 1994:497). Despite the lack of conclusive evidence, the genetic contributions to modern rates of diabetes have been overemphasized in the past, contributing to a sense that this disease is inevitable across all American Indian populations.

In addition to the problems of a sense of inevitability and surrender, the thrifty gene hypothesis points to diabetes as a contact disease with Anglo settlers. The responses of the participants often idealized the conditions of pre-contact life without the temptations of bad food and sedentary lifestyle.

Consensus on food

Sugar and fat were emphasized as causes of diabetes in all the participants' responses. Although there is no definitive evidence that the adoption of an Anglo diet leads to a risk of developing diabetes to the Pima Indians, the protective function of the traditional lifestyle hunter-gatherer-horticulturalists is more widely accepted (Smith-Morris 2001:201).

Many Pima health problems can be attributed to commodities brought by European explorers and colonists. The circulation of many new food commodities has affected the Pima diet. These new commodities were brought not only from merchants but especially in the form of federal food supplements to Indian Reservations as American Indians experienced difficulty in sustaining themselves without land or resources that were forcibly taken away. Foods from federal and state-administered distribution programs included: eggs, bacon, potatoes, lard, cheese, beans, canned meats, vegetables and fruits, dry cereals, dried or evaporated milk (Jackson 1994:387-388).

Caroline Smith-Morris describes the details and significance of the Pima food pathways (2005:38). Traditional food like beans and frybread are symbolic of social and religious gatherings, and many Pima cooks take great pride in their fry bread and are generous with a variety of other fried and sweet food. To please one's guests and family with food is the centerpiece of good hosting and is quintessentially the Pima way. Certain foods are associated with affluence or comfort and would therefore be particularly valued by hosts and guests alike. These foods can increase the symbolic importance of an event and may improve a host's status. The serving of food to visitors is a common and serious obligation among many American Indian groups. Declining food that is offered can be a significant social error regardless of a person's diabetes status. Thinness can be a sign of weakness or of poverty in some American

Indian communities. And amongst all peoples, diet can be a way to re-establish or break ties with tradition in a rapidly changing world. In the case of the Pima, who have experienced some of the greatest acculturative pressures of all the Southwest tribes due to their length and form of contact with Europeans, definitions of Indian-ness are drawn from historical and environmental contexts that include a political economy of health. Foods that are associated with the past, tradition, or Pima authenticity carry great symbolic value. The nutritional content of such foods is often useless to attach because it is not for nutrition sake that they are so carefully prepared, served, and consumed.

The relationship between tribes and their cultures of food are a result of their millennia-long direct relationship to the land. While it may appear to be an ironic contradiction that there is reluctance to change food habits, given the commonly expressed idea that “white man’s foods have made us sick,” foods and food pathways constitute complex codes for social relations and symbols of cultural identity during a time of deprivation. Diabetes, especially as it affects food patterns, appears to have provided the Pima Indians and other American Indian populations with another means through which to reflect and comment upon matters of continual concern regarding their history and their place with respect to the majority of society (Lang 1990).

Consensus on loneliness

The participants commented that they never saw their friends and family members with diabetes take their medications in full view. Rather, medications were taken behind closed doors or when people had left the common area. Caroloyne Smith-Morris also comments on this lonely diabetic life of the Pima in her dissertation (2001:184). Diabetics attempt to balance disease management with some traditional aspects of Pima life. Changes related to diabetes prevention

and management like diet changes, exercise, medication, glucose monitoring are changes that a diabetic has to do alone, making changes that much more difficult in a culture that valorizes sociability and togetherness as the Pima do. This makes diabetes a lonely concern. Families and friends do not typically help or change along with the patient. This is not to say that families are not sympathetic; they are. Families show concern and support by providing rides and company at appointments, child care, and most often a non-judgmental "live and let live" attitude toward behaviors and choices. But there is a strong personal modesty which prevents diabetics from sharing their disease experience with others.

Consensus on morality

Participants also mentioned the importance of following through with the physicians orders because it was good to take care of the body as much as possible. The ideological premises of biomedicine take on a moral character outlining what it defines a good person and patient. This is particularly true for diabetes because it is a disease that can and should be managed by the patient or he will be marked non-compliant and at fault for contributing to his own demise.

Formation of identity

These responses have indicated that diabetes is a part of being Pima/American Indian, gives opportunities to resist Anglo culture through food pathways during a time of deprivation, isolates sick individuals, and judges morality based on compliance.

The next section will discuss the current situation of the Pima Indians.

Current: natural resources

Although patches of the Ak-Chin Indian farming community had subsisted in the Sonoran Desert around shallow wells, pumping around Phoenix lowered the water table hundreds of feet, making farming too expensive to maintain by the 1960s. The Ak-Chin Indian Community then decided to sue the federal government citing the 1908 Supreme Court Winters doctrine which states the reservation of enough water to irrigate the land for farming. Congress granted the tribe 75,000 acre-feet of water per year from the Central Arizona Project and a Colorado River entitlement, and the precious water finally arrived by 1987 (Central Arizona Project 2005). These water rights have changed the Ak-Chin Indian Community by lowering unemployment from 38 percent to four percent, tripling farming lands, and encouraging self-sufficiency within two years of implementation (Carrier 1991) (Figure 8). Furthermore, other Arizona tribes have been encouraged to demand their own water rights from the federal government after a century of inadequate water service through the success of the Ak-Chin Indian community.



FIG 8. A) A view of a cotton field on the reservation and B) irrigation canal of the Ak-Chin Indian Community.

Current: Autonomy

The U.S. Public Health Service under the U.S. Department of Health and Human Services took charge of Indian health care in 1955 from the Indian Service, which had proven to be unable to manage Indian health and health care resulting in inadequate supplies, personnel, and communication for the Indians. In 1970, the Public Health Service was replaced by the Indian Health Service (IHS), and Indian Health Boards were created to ensure tribal input was obtained for IHS decisions. Due to the Indian Self-Determination Act of 1974, IHS funds were directly distributed to many tribal health facilities and services on reservations through contracts, and many tribes assumed the responsibility of managing and administering health care with HIS allocated funds through 638 compacts. This has removed much of the responsibility and control for tribal health services away from IHS to tribes. The Pima Indians of the Gila River Reservation have taken over their own health care system and have created the Gila River Health Care Corporation, which oversees all of the health services and facilities on the reservation. The Gila River Health Care Corporation currently manages and funds the Ak-Chin Health Clinic.

The Self-Determination Act has also affected health research with the Ak-Chin Indian Community as researchers are prohibited from arriving to reservation to conduct studies without prior announcement, permission, and supervision. Researchers must follow the tribal council's appropriate mechanisms for review, approval, and supervision including committees, appointments, protocol development, and feedback requirements to return research findings back to the community. This has made gaining permission to conduct research in the Ak-Chin Indian Community very difficult and a time- and resource-intense process. After submitting an in-depth research proposal that emphasizes the accessible benefits (and risks) of the project to the community, there are a series of seemingly endless reviews and meetings which usually take six

months to a year to follow through. The few researchers that are not rejected from this approval process must continue to work out plans for supervision and data reporting/management for another six months to a year reflecting the high level of consensus decision-making with some of the community's most vocal elders and key leaders.

In addition to authority granted directly from the Self-Determination Act, the Ak-Chin community has also exerted strong sovereignty over economic affairs. Proposition 202 has permitted Indian tribes to make and keep special financial arrangements with casinos. The Ak-Chin Community had permitted Harrah's to build a casino on reservation land in exchange for a set percentage of gaming revenues since the mid-1990s. Through this source of revenue, the Ak-Chin Indian community has provided funding for education, transportation, health care services, public safety, and economic development for the greater community (Peters 2004:3).

Current: Identity

The Ak-Chin Indian Community established the first Eco-Museum in the United States in 1991 by including the surrounding region as a supplement to the museum building (Figure 8). The material and oral collections of this "museum without walls" directly come from and are maintained by the community. The word Him-Dak means "way of life," and the Ak-Chin Him-Dak Eco-Museum reflects the community's definitions of its values, priorities, and identities through a sharing of the past, present, and future and serves to further aspirations of self-determination. There is a great sense of community's ownership to the Eco-Museum as the community has studied, conserved, exhibited, revitalized, and strengthened its own culture and identity. There is also a great sense of need to preserve traditions of the past and present for the

future as shown by the desire to revitalize the native O'odham language among community members (Figure 9).



FIG 8. A) Ak-Chin Him-Dak Eco-Museum. B) Feast House. C) St. Francis of Assisi Catholic Church.

Is it important that the Community make efforts to teach the O'odham language to people that don't know the language?

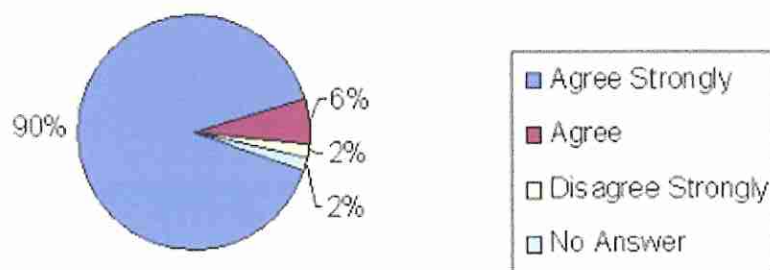


FIG 9. A) Data taken from Ak-Chin O'odham Runner survey in March 2004.

Critique

The Pima Indians have been progressively driven to transitioning from a self-sufficient farming lifestyle to a dependence on a cash economy. The exploitation of natural resources, namely water and land, by the imperialistic federal government literally left Pima farms dry and unable to compete with the capitalistic marketplace. Farmers were then forced to shift from a farming occupation and lifestyle to that of sedentary wage work. Furthermore, this transition lead to dependence on the federal government for aid and on manufactured and processed goods produced off the reservation.

At the same time of these material and autonomy losses, there was a loss in identity and culture from a period of forced assimilation. Although children often were voluntarily placed in off-reservation boarding schools due to family instability like financial difficulties, death, and alcoholism, these children often lost more in these “institutions of reform.” There was a loss in parenting and traditional family structure, language, and cultural identity. The intent of placing children in boarding schools during this time was to change the child so that he could affect his family, both parents and future children, when the child returned to the reservation with Anglo ideals. However, this intended effect did not occur and instead resulted in confused and broken families filled with shame of being an American Indian.

However with the outgrowth of the Indian Self-Determination Act for the past three decades and other acts of retribution given to the American Indian communities by the federal government, many of these losses have been addressed in American Indian populations. The Pima Indians of the Ak-Chin Indian Community have repossessed water rights and farm lands and sovereignty and also demonstrated dedication in preserving and honoring the traditional past, present, and future. The Pima have shown economic and political independence by acculturating

only enough to gain control over some of the forces that determine their political economic status. Acculturating in this case has consisted of participating in capitalistic ventures, speaking English, self-governing the community through a system imposed by colonial pressures, working with the government bureaucracy and funding, and engaging with dominant government and economic forces continually. But in the midst of it all, they have recovered, re-formulated, and maintained their cultural identity. Particularly through the diabetes epidemic, there has been a tension in balancing the need and desire for biomedical health services against the growing insistence on self-determination and distinct cultural identity (Smith-Morris 2001: 205).

I was wrong in interpreting Josie's words at the Feast House when I concluded that she was trying to frame the diabetes identity as her and her community's him-dak. Him-Dak is not about fighting diabetes on a day-to-day basis. Rather, it is the tension between maintaining and negotiating a cultural identity amidst a history filled with structural violence and disenfranchisement, the current meanings and isolating effects of diabetes, and future opportunities provided by a resurgence in autonomy, resources, and identity. This is the new **Him-Dak** of the Pima Indians (Figure 10) (Figure 11).



FIG. 10 Wall of community pictures celebrating memories of community members.

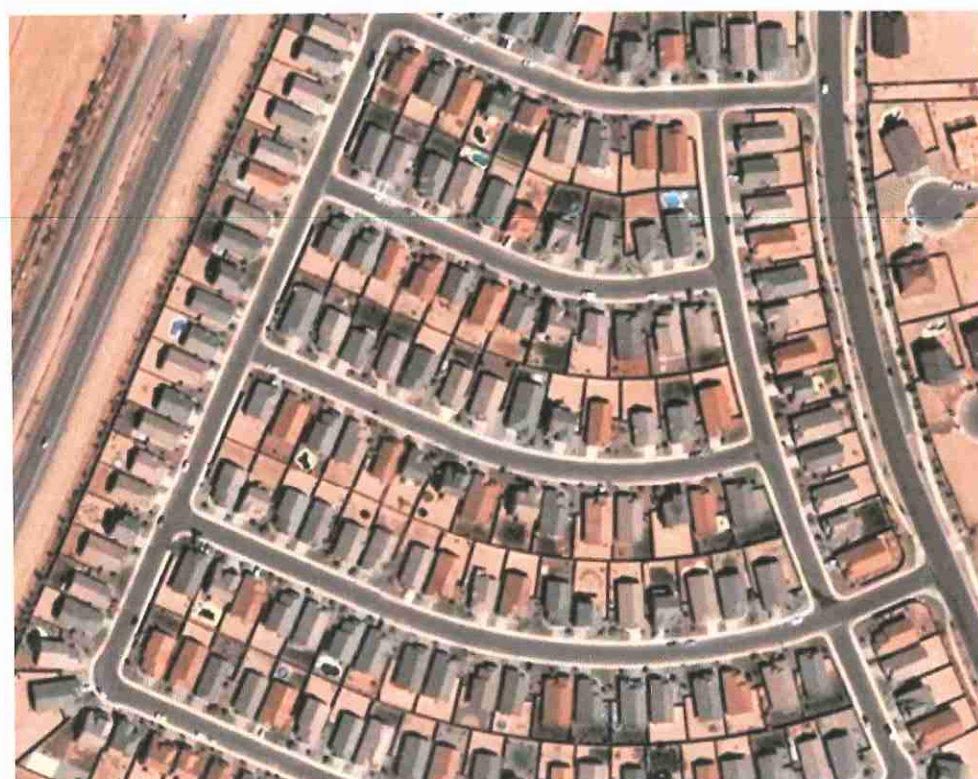


FIG 11. Growing cluster of homes in the town of Maricopa right across the borders of the reservation (less than 5 miles). Note blue dots are backyard outdoor pools.

Conclusion with a world perspective

The biomedical view of the Pima body is that of a diseased state and one that is fundamentally different in genetics, physiology, and lifestyle patterns from others. However, the manifestation of illness and disease is more than the result of abnormal biochemical pathways; it is also in part the result of egregious expressions of structural violence and unequal power dynamics. The creation of inequality of the Pima Indians of the Ak-Chin Indian Community through the loss of natural resources, autonomy, and identity/culture mirrors the experience of many American Indian groups and other colonized indigenous populations groups all over the world.

Dependency theory outlines that the development of advanced capitalist countries is to a considerable degree at the expense of the masses of people in the underdeveloped nations. The underdevelopment of health in certain populations in capitalist countries is an inevitable consequence of the depletion of natural and human resources that accompanies imperialism (Baer 1982:15). According to Oscar Gish (1979:210), it is becoming increasingly clear that in the Third World, improved health is not primarily a matter of medical systems, but rather a broader question requiring better understanding of the nature of underdevelopment itself. These structural barriers constructed by imperialism combined with the physiologic effect of traumatic experiences have left the bodies of indigenous peoples all over the world vulnerable to illness and disease.

This paper has attempted to analyze the impact of the political and economic forces that pattern relationships and behaviors while remaining accountable to the cultural meanings and experiences of the Ak-Chin Indian Community of Arizona with the current diabetes epidemic. However, this story and analysis is not only of this community but also of the American Indian

Community and of colonized indigenous people all over the world. The special contributions provided by anthropology lies not only in its ability to explore first hand the immediate experiences, interpretive systems, motivations for actions, behavioral repertoires, and ecological and social relations of local actors. Rather, it is the opportunity to investigate all of these aspects of human life in relation to each other and to the broader and cross-cutting set of political-economic relations that condition their very nature (Singer and Baer 1995:73). There is a need to move the question from how people's socioeconomic status is related to health status to ask why are some people poor in the first place, why do some get sick when others do not, why are some able to cope with problems when others cannot, and how poverty and poor health are mutually causative and constituted (Leatherman 2005:50).

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